Advisory Report

September 25, 2013

Key Findings:

- A large volume of fleet-related expense in local jurisdictions results from parts procurement.
- Most local jurisdictions have implemented few, if any, best practices to ensure that parts inventory and supply management systems are handled in an efficient fashion.
- The City of Springfield is currently exploring options related to parts supply management and just-in-time inventory alternatives. The CEC has found that comparable peer jurisdictions have generated considerable savings from similar activities.
- The CEC recommends that local jurisdictions consider alternative parts management systems for their fleet maintenance operations. The CEC further recommends that local governments consider cooperating in a "hub-and-spokes" fashion to allow the benefits of a parts management system to be accrued by jurisdictions that handle a lesser volume of equipment.
- The CEC further recommends that each of the affected entities, such as parts management employees, public sector organized labor, and administrators, establish a working group to discuss implementation steps and potential savings.

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Citizens' Efficiency Commission Recommendation: Parts Inventory and Supply Management Systems

Introduction

This report represents a formal recommendation by the Citizens' Efficiency Commission (CEC). Members of the CEC and its research staff have verified information contained in this report. The Commission expresses its hope that relevant local leaders will review the recommendation and take strides toward its implementation.

In light of the research presented below, the CEC recommends that local jurisdictions consider alternative parts management systems for their fleet maintenance operations. The CEC further recommends that local governments consider cooperating in a "hub-and-spokes" fashion to allow the benefits of a parts management system to be accrued by jurisdictions that handle a more limited inventory.

The CEC further recommends that each of the affected entities, such as parts management employees, public sector organized labor, and administrators, establish a working group to discuss implementation steps and potential savings.

The Commission is prepared to provide assistance to the greatest extent possible for the review and implementation of these recommendations. The CEC may be interested in further efficiency considerations that develop based on this advisory report.

Background Information

Early in its work, the CEC received the suggestion that it consider opportunities for local entities to consolidate or combine their fleet maintenance garages or operations in some manner. Concurrently, the CEC observed that the City of Springfield and Sangamon County were separately undertaking the task of combining their respective fleet maintenance operations to a single location for each.[1]

Rather than duplicate the efforts at exploring fleet consolidation that were already occurring and that could provide lessons and models for similar consolidation in other jurisdictions, the CEC redirected its work to instead consider parts management and inventory for these garages. This redirection was encouraged by a recommendation in a 2012 review by

[1] Citizens' Efficiency Commission. September 12, 2012. "Positive Local Efforts Applauded by the Citizens' Efficiency Commission." Available at: http://www.co.sangamon.il.us/Departments/Regional Planning/documents/CEC/ Positive%20Local%20Efforts%20Document.pdf.; The CEC notes that opportunities for additional garage consolidations, for entities such as the Park District Police's fleet maintenance operations, SMTD, or smaller municipalities and special districts in the region may also exist.

CST Fleet Management Services that the City of Springfield pursue the implementation of an asset management system.[2]

In May of 2013, the Public Works Committee of the CEC presented the following finding to the full Commission for its support:

Many local governments have substantial expenses related to inventory and supply, particularly in the area of fleet management and parts. "Just-in-time" inventory and other supply management systems can be helpful in reducing costs associated with excess, undocumented, or obsolete inventory. The City of Springfield has recently, as part of its garage consolidation efforts, endeavored to explore opportunities for addressing these issues through privatized supply management arrangements. The Public Works Committee requests the full support of the commission to further explore alternatives for inventory management and opportunities for expansion and cooperation related to existing local efforts.

Efficiency Research Questions

As it pursued its research related to this finding, the CEC asked such questions as:

- Can parts inventory systems cause local government fleet maintenance operations to function more effectively or at lower cost?
- In what areas, if any, might parts inventory or just-in-time supply be of benefit to local government?

Overview of Existing Services

Most municipalities and townships in Sangamon County, as well as the County and some special districts, have some fleet or vehicles for which they undertake maintenance. Much of this maintenance is performed in-house where possible.[3]

City of Springfield

As noted previously, a fleet management systems analysis performed in 2012 by CST Fleet Management Services indicated that the City of Springfield's fleet operations were dated, including its parts and asset management systems. The CST study presented the information in Table 1, below, related to the fleet maintenance costs for the City's multiple garages.

Since that time, Springfield has begun to consolidate its fleet maintenance functions. At the time of the current recommendation, the City had purchased a garage facility for a combined operation at Capitol Avenue and Martin Luther King Jr. Drive and was exploring opportunities related to parts maintenance.[4] The CEC notes that the City has expressed interest in a parts inventory and supply arrangement with a private vendor and was exploring this alternative at the time of the present recommendation.

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[2] CST Fleet Management Services. May 2012. "Fleet Management Program Review" Available at: http://www.springfield.il.us/OBM/CSTSpringfieldFleetStudy.pdf.

[3] CEC Interview with Tim Zahrn, Sangamon County Engineer (May 7, 2012); CEC Interview with Shane Workman, Chatham Township Highway Commissioner (May 7, 2012); CEC Interview with Alex Lyons, Clear Lake Township Highway Commissioner (August 27, 2012); Personal communication from Bill McCarty, Budget Director, City of Springfield (April 25, 2013).

[4] CEC Interview with Bill McCarty, Budget Director, City of Springfield (August 12, 2013).

Table 1: CST Analysis of Fleet Costs for the City of Springfield, FY2012

Fleet Costs FY 2012 ($ x 1000)						
Baseline Data for Study		Fire	Police	PubWrks	CWLP	
						Total
Total Labor		$478	$545	$995	$2,255	$4,273
Parts Costs		$132	$ 187	$ 326	$ 597	$1,242
Outside Services		$ 60	$ 22	$ 207	$ 52	$341
		$ 670	$ 754	$ 1,528	$ 2,904	
				Total Fleet Cost w/o Fuel	**$ 5,856**	
Fuel - CWLP		AVG per GAL		Fuel Police		All Fuel
UNL	230356	2.985	$ 687,686	240,536	$ 718,000	$ 1,405,686
DLS	233040	3.411	$ 794,895			$ 794,895
DSL - Dyed	30216	3.246	$ 98,078			$ 98,078
					All Fuel	$ 2,298,659
Total Fleet Costs FY 2012			**$ 8,154,659**			

Sangamon County

Since the consolidation of maintenance garages for all County entities, parts purchases for all Sangamon County departments' fleets are handled through the County Highway Department. The Highway Department does not charge other departments labor costs for maintaining their fleets, but does receive reimbursement for parts. Since the time of the garage consolidation at the highway department, annual total parts costs have been just under $167,000 (Table 2).

The Sangamon County Highway Department maintains a basic limited inventory at its maintenance garage. It typically purchases additional parts from nearby O'Reilly Auto Parts on an as-needed basis. The Highway Department does not have a supply management inventory system in place.[5] The Highway Department also noted in conversation with the CEC that many of its parts are specific to larger equipment and are received directly from an implement dealer. This unique situation may also be applicable to other jurisdictions with large equipment.

[5] Personal communication from Tim Zahrn, Sangamon County Engineer (June 19, 2013).

Table 2: Parts Costs for Sangamon County, 2012-2013

Sangamon County Fleet Maintenance	
June 01, 2012 - May 31, 2013	
124 Work Days	
Department	**Charges**
Animal Control	$ 2,659
Auditor's	$ 432
Building & Grounds	$ 363
Community Resources	$ 81
Coroner	$ 1,714
Court Services	$ 2,840
E-911	$ 158
Environmental Health	$ 8,582
Highway	$ 97,067
Juvenile Center	$ 1,127
OEM	$ 969
Personal Health	$ 749
Public Health Admin	$ 486
Sheriff	$ 46,917
States Attorney	$ 642
Veterans Assistance	$ 278
Zoning	$ 1,556
Total	**$ 166,620**

Municipal Public Works Departments and Township Road Commissioners

Most municipal public works or police departments and Township Road Commissioners do substantially less fleet maintenance than the larger entities described above. In conversations with various township road commissioners and local mayors, the CEC found that these officials tend to handle maintenance for their own vehicles as needed. While the larger users described above have some personnel dedicated exclusively to parts supply, most smaller municipalities do not. Local municipalities also often engage a local private maintenance shop for services. The CEC notes that engaging the services of local businesses is at times an important policy preference for local leaders.

In the existing arrangement, township governments have a close working relationship with the County Engineer, but County interaction with municipalities is more limited. The County Engineer indicated that cooperation with Township Road Commissioners extends into the following areas: acting as an advisor to the Township Road Commissioners; helping with equipment and related purchases; and setting up "lettings" for salt and other materials for all townships, which are sold to the townships at cost. There is also equipment sharing among some County and township entities. In addition, the County assists township highway commissioners with their annual budgets and facilitates road commissioner meetings periodically throughout the year to help coordinate activities. However, the CEC received

no indication that parts inventory or maintenance systems are coordinated among various jurisdictions.[6]

It is also important to note that types of fleet vehicles vary across jurisdictions. Some municipalities may have more standard fleet equipment with smaller vehicles, like police cruisers, whereas townships may have more implement-based equipment oriented toward their tasks of snow plowing and road maintenance.

Table 3: CST-Identified Part Management Best Practices

Parts Management
Parts costs inclusive of burdened rate for parts overhead costs
Parts availability tracked and above 80% (i.e. 80% of the time a mechanic goes to the parts window , part is immediately available)
Parts replacement warranty tracked
Statistics on part failures tracked and monitored - i.e. largest part failures in the fleet
Parts Management System in place with WO charges and Ordering System
Indirect parts and or supplies tracked and charged to departments
Parts charged to WO via bar code
Minor parts charged or built into overhead rate
Parts ordered efficiently
Parts inventory taken and balanced on a regular basis with slippage monitored
Parts for re-order calculated and ordered upon review
Efficient process in place for receipt and payment for parts
Plan implemented to identify and remove obsolete parts
System and process in place to adjust re-order levels based on usage trends
Ability to adjust parts inventories based on vehicle purchases and vehicle retirements
Parts in/out for satellite store rooms entered into a central database
All outgoing parts assigned to a WO/Vehicle or Indirect Code
Effective system for managing vendor supplied parts which do not go into inventory in place and charged against WO
Effective management and duration of part supplier contracts

Best Practices & Case Examples

The CST study conducted for the City of Springfield identified a series of parts management best practices for consideration. These are listed in Table 3 below. Among these best practices, the City was partially utilizing nine and did not utilize the others. The CEC estimates that Sangamon County Highway Department is using less than five, though not all of these best practices may be applicable to a parts operation of Sangamon County's size.

Many of the parts management best practices described by CST can either be handled internally as staff time and resources allow, or handled on a contractual basis in conjunction with another government or a private sector parts management entity. The CEC explored a number of case histories of various sizes in other jurisdictions in which parts management inventory systems were put into effect.

In exploring these case histories, the CEC found that the benefits of parts management and supply control may include:

- On-time inventory is purchased by the local government on an as-needed basis, which reduces needed volume of parts in stock, thereby freeing revenues for other uses and allowing for improved cash flow.
- Automated part tracking and bar-coded parts assists in asset management and record-keeping.
- The likelihood of surplus, duplicate, or obsolete parts being unnecessarily purchased is reduced, as is part loss, 'slippage,' and/or reduced inventory volume due to theft.

[6] CEC Interview with Tim Zahrn, Sangamon County Engineer (May 7, 2012).

Vendors' systems may allow for bulk purchasing power not held by a single jurisdiction.

The initial example the CEC reviewed was that of the City of Chicago. Chicago's fleet operation includes over 13,000 vehicles, ranging from police cruisers to garbage trucks. Chicago's transition resulted from a mayoral directive to reduce fleet maintenance costs. In the current system, the Chicago Department of Fleets and Facility Management union employees work in the maintenance portion of the operation, but the parts warehouse for fleet needs is staffed by private employees.[7] The Chicago Transit Authority also engaged the services of the same vendor, and eliminated almost $5 million in obsolete inventory from its parts warehouse, though with a slightly different arrangement. In the CTA's current operation, union CTA-employees stock and work with parts that are managed through a privately-run system.[8] The distinction between these two entities' approaches demonstrates that numerous alternatives exist related to parts inventory and management systems, which can function as a management tool utilized by existing employees or, alternatively, be staffed by a system vendor's employees.

Of course, the City of Chicago's needs are much larger that those found in municipal jurisdictions in Sangamon County. However the CEC believes that the Chicago case is still instructive in regard to what might be done locally.

The Chicago case also brought to light the importance of labor relations considerations in undertaking a parts inventory/supply management endeavor. The CEC found it significant that the City of Chicago successfully negotiated the privatization process with 11 affected labor unions. Chicago Fleets and Facility Management representatives advised the CEC of the importance of including all affected parties from early in the negotiation process.

As suggested above, one concern the CEC experienced related to this example is the vast size of the City of Chicago's fleet operations in contrast to the fleet maintenance needs in place locally. In response to this concern, the CEC asked Chicago and its vendor about the scalability of such initiatives to communities of smaller size.

The CEC learned that the vendor engaged by the City of Chicago charges for the supply management system through a percentage mark-up from wholesale costs for parts, which is charged to the contracting jurisdiction on top of the parts costs. This mark-up price break varies based on the amount of inventory, typically making it cost effective to enter a contract only if the jurisdiction involved utilizes parts of over $50,000 in value each month.[9] The vendor also reported that those with over $1 million in monthly parts value typically receive much more favorable terms of contract. As evident in the descriptive figures above, the City of Springfield clears the lower of these thresholds based on its current operation. In contrast, Sangamon County has a much more limited need for parts.

As an additional example, the City of Aurora, Illinois, with a 2010 population of 197,850, purchases over $100,000 in parts monthly through its just-in-time supply system.[10] In

[7] Personal communication from Mike Picardi, Midwest Division IBS Manager, NAPA Auto Parts (April 25, 2013).
[8] Personal communication from Randi Brokvist, Vice President for Purchasing and Supply Chain General Manager, CTA (April 25, 2013).
[9] Personal communication from Mike Picardi, Midwest Division IBS Manager, NAPA Auto Parts (June 20, 2013).
[10] Personal communication from Joe Hopp, Director of Fleet Operations, City of Aurora (August 2, 2013).

conversation with the City of Aurora, the CEC learned that Aurora has been under contract with a private vendor for nearly seven years. In early July 2013, Aurora renewed their contract with the same vendor that they had historically used, though there were other viable competitors at that time.

The City works on a "cost plus" basis, essentially paying for the cost of the part and a 7% mark-up for their vendor, with substantial rebates on vendor-sourced parts. The vendor owns parts that it keeps in stock for the City. Aurora Director of Fleet Operations Joe Hopp indicated that liability for these parts costs was an important consideration for jurisdictions considering a similar arrangement. When the City's first parts management/supply contract ended in 2013, In addition to a renegotiated price, Aurora placed a clause in its request or proposal (RFP) that indicated the lowest bidder for the contract would be required to purchase parts currently within their existing vendor's on-site inventory, eliminating the City's liability in regard to those parts, should it opt for a new vendor.

Director Hopp indicated that the transition to a parts inventory system was smooth and resulted in marked labor and noticeable parts savings. He also highlighted that 80% of parts requested are available to Aurora's fleet maintenance employees within 15 minutes or less under the current arrangement. Aurora's Fleet Operations department has found that the arrangement provides reliable staffing for the on-site parts supply counter, as well as regular reports of the on-site inventory available to the City's fleet operations. Finally, Aurora noted that if a needed part is not available within the on-site inventory, its vendor is able to reach out to other inventories that it manages nearby to source the product quickly.

Alternatives

Several options are available on a region-wide basis related to parts inventory and supply management. These alternatives include:

1. Maintain the status quo.
2. Implement parts management best practices with existing personnel and structures.
3. Implement alternative parts management systems on a jurisdiction-by-jurisdiction basis.
4. Implement alternative parts management systems on a regional basis.

Alternative 1—Maintain the status quo. This alternative would keep existing levels of service and efficiency. With this option, the CEC feels that the beneficial efforts undertaken with the City and County's recent garage consolidation efforts[11] remain incomplete, particularly given the fleet analysis conducted for the City of Springfield and the substantial expenditures dedicated to fleet maintenance parts in the region.

Alternative 2—Implement parts management best practices with existing personnel and structures as able. This approach may achieve the benefits associated with improved parts management, but given existing staff resources would not likely approach the same level of control that could be implemented with an outside partner entity in place to barcode and catalog inventory. As the CEC is aware, local jurisdictions do not track parts availability rates and have relatively informal processes for parts procurement. Implementing the systems

[11] Citizens' Efficiency Commission. (September 12, 2012). "Positive Local Efforts Applauded by the Citizens' Efficiency Commission." Available at: http://www.co.sangamon.il.us/Departments/RegionalPlanning/documents/CEC/Positive%20Local%20Efforts%20Document.pdf.

management improvements detailed above may require considerable investment on the part of public sector entities involved in order to cover administrative costs.

Alternative 3—Implement alternative parts management systems on a jurisdiction-by-jurisdiction basis. This allows for the benefits of Alternative 2, but does not require local jurisdiction to re-invent systems for parts inventory and supply measurement. Although there is a cost associated with involving an outside entity to implement a parts management and supply inventory system, similarly-sized communities, such as Aurora, have indicated proven savings due to the benefits of reduced slippage and obsolescence, better inventory control, potential economies of scale resulting from national pricing contracts that may be held by a larger vendor, and reduced staff time for parts management and acquisition. The CEC notes that within this alternative there are multiple approaches to a parts management system that can be considered by local governments. Government entities may wish to utilize the parts management software systems and just-in-time inventory purchases provided by an outside entity only, while retaining existing employees. Alternatively, they may wish to engage a vendor's personnel services within their parts operations as well. Both options can be considered in implementing a partnership with a private sector entity.

Alternative 4—Implement alternative parts management systems on a regional basis. This would cause local governments to accrue benefits similar to those described for alternative three above, but would extend the opportunity for these savings to those jurisdictions that do not have the parts volume that would make the additional costs associated with a vendor contract cost effective. Moreover, allowing a central, larger jurisdiction to function as a "hub" in this arrangement may provide benefits to that jurisdiction as well by ensuring that the volume of parts being handled on an annual basis can meet or surpass a higher threshold for price Although the CEC has not fully researched the costs implicit in such an arrangement or the existing costs for maintenance parts in smaller jurisdictions locally, it finds it intuitive that economies of scale associated with such a system may lead to addition cost savings.

Recommendations

In light of this research, the CEC recommends that local jurisdictions consider alternative parts management systems for their fleet maintenance operations. The CEC further recommends that local governments consider cooperating in a "hub-and-spokes" fashion to allow the benefits of a parts management system to be accrued by jurisdictions that handle a lesser volume of equipment.

The CEC further recommends that each of the affected entities, such as parts management employees, public sector organized labor, and administrators, establish a working group to discuss implementation steps and potential savings.

The potential benefits of implementing the recommendations include:

- Increased control over obsolete, misplaced, or stolen inventory;
- Increased cash flow due to reduced public ownership of supplies;
- Improved record-keeping and asset management; and
- Potential economies of scale resulting from cooperation with nation-wide entities.
- Increased likelihood of a smooth implementation process as a result of involving all affected groups.

Cooperative exploration of parts systems may also allow some jurisdictions to implement a just-in-time supply system that would not otherwise have the volume to make such a system cost effective.

Challenges to Implementation

The first potential obstacle to implementation of this recommendation may be cost. The CEC has not conducted a thorough cost-benefit analysis, but assumes that similar savings to those achieved in Aurora would occur. Since local parts operations currently attain few of the best practices in the field, the CEC finds it reasonable to assume that they may not be as cost-efficient as they could be. Furthermore, economies of scale from a nation-wide vendor could lead to substantial cost savings over time.

However, contracting out for such a service would require some hard costs that local jurisdictions would need to recoup in order to attain cost efficiencies through this effort. As part of its RFP process, any involved local jurisdictions would benefit from additional exploration of their current costs for this function. The literature surrounding contracting with a private entity for government services emphasizes a focus on cost-, not merely low-cost arrangements. It also recommends a thorough cost-benefit analysis by an outside party and proper oversight for government services.[12]

Another potential obstacle to implementation is the desire for local control of procurement processes. Some local governments make purchases from a local vendor regardless of whether that vendor provides the lowest cost, as a matter of policy preference.

Finally, the implementation process may meet with opposition from public sector union employees and/or labor groups. The CEC found throughout its work that successes in this area were dependent upon engaging labor groups from the initial stages of the process. Regardless of which model for parts inventory and supply management systems local jurisdictions choose to implement, union employees should be engaged as stakeholders throughout the process in order to ensure that changes can be implemented effectively.

Steps toward Implementation

In order to implement this recommendation, the CEC recommends that the following course of action would be beneficial:

- Utilize local resources or engage a consultant to conduct a cost study for existing parts management operations in county-wide jurisdictions.
- Involve and engage public sector unions and labor employees in the dialogue related to parts management systems.
- Develop a regional working group to discuss and determine the potential benefit of a "hub and spokes" model.
- Develop and issue RFPs for both individualized and cross-jurisdictional arrangements.

[12] Nichols, Russell. (2010). "The Pros and Cons of Privatizing Government Functions." *Governing*. Available at: http://www.governing.com/topics/mgmt/pros-cons-privatizing-government-functions.html.

- Conduct cost-benefit comparisons between existing costs and responses to the RFP.
- As deemed appropriate, implement parts inventory system management systems.

The CEC offers its support for these implementation efforts. If the CEC can provide any further assistance in facilitating efforts toward cooperation, it would be pleased to do so.

Respectfully submitted,

Hon. Karen Hasara, Chair
on behalf of the
Citizens' Efficiency Commission
for Sangamon County